

ICEF 2022 Statement from the Steering Committee

October 6, 2022

Under the main theme of “Low-Carbon Innovation in a Time of Crises”, the ninth annual meeting of the Innovation for Cool Earth Forum (ICEF 2022) was held in a hybrid format on October 5 and 6, 2022 as an initiative of "Tokyo GX Week", a series of 10 conferences that discussed on a wide range of energy and environmental issues. More than 1,600 people from governments, international organizations, industry, and academia participated in this event, representing 87 countries and regions. At the conclusion of ICEF 2022, the Steering Committee is releasing the following statement based on a series of discussions.

1. Crises we face

- This year people in many parts of the world experienced record high temperatures, as well as devastating wildfires, floods and droughts, threatening human lives and nature. The Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC AR6) pointed out that we are not on track to limit warming to 1.5°C. Unless there are immediate and deep emissions reductions across all sectors, 1.5°C is beyond reach, increasing the danger of exceeding more tipping points. Even 2°C has become increasingly challenging.
- In addition, the COVID-19 and the war in Ukraine have not only shocked but also dramatically disrupted our energy and food systems. The war has impacted various energy markets and threatened energy security of many economies.
- As a result, both the use of coal and emissions are rising. We also face the imminent issue of inflation, in particular energy and food price hikes, and supply-chain disruptions.
- All these crises revealed weakness of international and national institutions to address global issues.
- Furthermore, social unrest and political violence in some parts of the world have been rising, due to the public’s dissatisfaction and anger in the difficult socio-economic situation.

2. Opportunities we have: diversified approaches

- Since its start in 2014, ICEF has promoted innovations as a solution to climate change. Innovation becomes even more significant and crucial under these uncertainties and cascading challenges. The current rapid cost declines and massive deployment of renewables demonstrated that transformational change is possible. Now we need to transform other areas and sectors. Momentum for public and private R&D incentives and investment in clean energy technologies is now higher than ever before. Countries’ pivotal measures away from dependence on fossil fuels can accelerate clean and secure energy transition in the medium and long term.
- Diversification in approaches is essential to materialize opportunities. Diversified approaches will create sound competition among different technologies, and therefore constitute an origin of innovation and contribute to their deployment.
- Diversification is also an important principle of resilience that helps enhance capability to grapple with risks and uncertainties. It is thus indispensable for tackling energy security issues and moving towards the post-COVID-19 era, which are now transforming our society.
- ICEF embodies diversification and inclusiveness. We not only facilitate discussions and debates among countries and regions with different pathways, various technological areas, sectors of industry, academia and government, and many other stakeholders, but also ensure cross-generational representation and gender diversity.

3. Need for accelerated action before 2030

- While the number of countries and regions pledging carbon neutrality and with climate legislation is increasing, CO₂ emissions in 2021 rebounded at the highest level after a temporary decrease in 2020 with the COVID pandemic lockdown. The short-term emissions unfortunately continue to increase. In the meantime, the IPCC AR6 assessed that the remaining carbon budget from 2020 onwards is 500 Gt CO₂ to have a 50% chance of limiting warming to 1.5°C, while existing fossil fuel infrastructure is expected to emit cumulatively 610 GtCO₂ from 2018 until the end of its lifetime. We simply cannot keep this pace forward and must reverse the trend as soon as possible.
- It becomes crystal clear that this decade up to 2030 is critical in order to deliver carbon neutrality by mid-century, and that we need to accelerate innovation and deployment.

4. Action-oriented innovation

- In the midst of surging discussions on energy security and geopolitics, at ICEF 2022, leading experts discussed (1) how innovation can contribute to delivering both carbon neutrality and energy security, and (2) what practical action-oriented approaches are required to accelerate transition leading up to 2030.
- Policymaking shall also adopt innovation. When energy geopolitics is so much heightened, energy security and energy transition must be pursued in a more balanced and rational manner. Fair market conditions and mechanisms for decarbonization need to be established. A new industrial policy for deployment is needed.
- Transition must take into consideration of socio-economic impacts and ensure to leave no one behind. Thus, how innovation contributes to increasing compatibility between economic development and carbon neutrality shall be addressed. As many countries still depend on fossil fuels for economic growth, we seek answers to how to pursue wise use of fossil fuels in the challenging energy transition.
- Technology innovation offers perspective and options to choose. In ICEF, we dive deep into a wide range of technological options for both the supply-side and demand-side. On the supply-side, carbon dioxide removal and utilization, nuclear, hydrogen and synthetic fuels in heat and transport sector, and critical minerals are examined in depth; and on the demand-side, enhancing energy efficiency and utilizing renewables in all sectors are emphasized.
- Given that carbon neutrality requires all sorts of carbon dioxide removal technologies, we discussed how to ensure the environmental integrity of those technologies, in particular around increasing R&D and good governance.

5. In closing

- ICEF has diversity and inclusiveness in its DNA by design. We always embrace and celebrate the participation of speakers who represent and embody diversity. This year we have paid particular attention to increasing the representation and voices of younger generation who will lead and define a sustainable, resilient and inclusive society of 2050. We at ICEF remain firmly committed to engaging diverse stakeholders and thereby creating stronger momentum for technological and social innovation for carbon neutrality.

Low-Carbon Innovation in a Time of Crises

